A Puzzle in Gradable Adjectives

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Outline

- ▷ The problem
- ▷ Nanosyntax
- ▷ Evidence for the analysis
- ▷ Further support
- ▷ Comparatives
- ▷ Conclusion

1 Introduction

▷ Many gradable adjectives come in polar antonyms:

(1)

happy	sad
wise	foolish
clean	dirty
friendly	hostile
healthy	sick
kind	rude
true	false
safe	dangerous

▷ the positive poles of the opposition may be prefixed with *un-* (see (2a))
▷ the negative poles cannot be prefixed with *un-* (see (2b); Jespersen 1942:466, Zimmer 1964, Horn 2005)
▷ the negative poles are not resistent to negation *per se*, as they can be negated with *not* (see (2c))

(2)

a.	b.	c.
unhappy	*unsad	not sad
unwise	*unfoolish	not foolish
unclean	*undirty	not dirty
unfriendly	*unhostile	not hostile
unhealthy	*unsick	not sick
unkind	*unrude	not rude
untrue	*unfalse	not false
unsafe	*undangerous	not dangerous

Aims of this talk:

- ▷ account for this restriction and the contrast between *un-* and *not*
- ▷ present additional data supporting the account
- ▷ in doing so, develop a proposal about the functional superstructure of gradable adjectives

2 Nanosyntax

Basic principles:

- ▷ syntax is prior to the lexicon
- ▷ the syntax works only with features and combinations of features
- ▷ lexical insertion is postsyntactic
- ▷ each feature is a syntactic head that projects
- ▷ morphemes spell out combinations of features, i.e. morphemes do not spell out heads but phrases (*phrasal spellout*)
- ▷ lexical insertion is subject to the *Superset Principle*

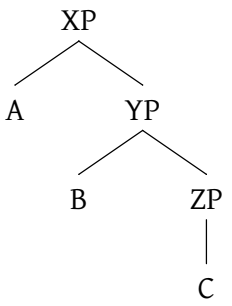
(3) *Superset Principle*
A lexical entry may spell out a syntactic node (SN) iff the features of the lexical entry are a superset of the features dominated by the syntactic node.

- ▷ in case two items compete for insertion, the Elsewhere Principle applies:

(4) *The Elsewhere Principle*
In case two rules, R_1 and R_2, can apply in an environment E, R_1 takes precedence over R_2 if it applies in a proper subset of environments compared to R_2.

▷ in case two items compete, the more specific item wins

(5)



⟨/α/, {A, B, C, D}⟩

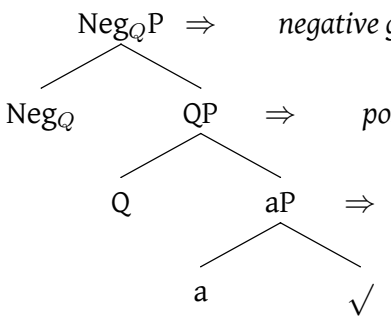
⟨/β/, {A, B, C, D, E}⟩

▷ the syntactic tree XP dominates the features A, B, and C
▷ both lexical items α and β are candidates for spelling out XP, because their features are a superset of the features of the syntactic tree
▷ α will win the competition from β because it is is a closer match for the syntactic tree
▷ an informal way of stating the Elsewhere Principle is 'Minimize Junk'

3 Analysis: a difference in size

▷ The difference between polar antonyms (e.g. *happy-sad*) is a difference in the size of the tree, i.e. in the number of features they spell out:

(6)



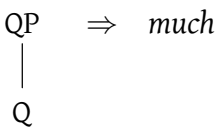
▷ the features involved are Neg$_Q$, Q, *a* (a categorial head feature), and a (acategorial) root feature ($\sqrt{}$)
▷ nongradable adjectives (*nuclear, classical*, …) spell out the aP node (i.e. the features *a* and $\sqrt{}$)
▷ positive gradable adjectives (e.g. *happy*) spell out the QP-node (i.e. the features Q, *a*, and $\sqrt{}$)
▷ negative gradable adjectives (e.g. *sad*) spell out the Neg$_Q$P-node (i.e. the fea-

tures Neg_Q, Q, *a*, and $\sqrt{}$)

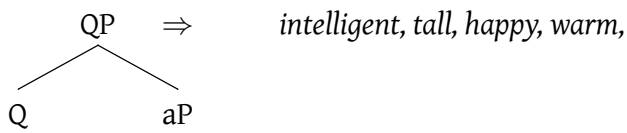
4 Evidence for the analysis

4.1 Support for QP

▷ Q is a feature which denotes a positive quantity
▷ *much* spells out this feature

(7) 

▷ positive gradable adjectives spell out the features Q, *a*, and the root feature (ignored in the trees to follow):

(8) 

▷ evidence for (8) is found in the semantics
▷ positive gradable adjectives denote a high degree (e.g. Seuren 1978, Bresnan 1973, Kennedy 1999, Kennedy & McNally 2005, Neeleman et al. 2006)

(9) John is tall.

▷ not: John has a degree on the scale of tallness
▷ but: John's degree of tallness is above the standard degree of tallness, i.e. *John is* MUCH *tall.*

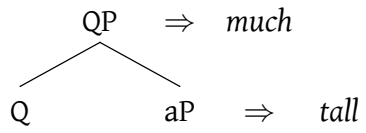
▷ an obvious question raised by this analysis is why (10) is impossible:

(10) *John is much tall

▷ *much* cannot spell out the tree in (8) because the features of the lexical item *much* (Q) are a subset of the features in the syntactic tree (Q, a, $\sqrt{}$)
▷ in contrast, any positive gradable adjective can spell out the tree in (8) because the features of positive gradable adjectives and those of the tree in (8) are an exact match

▷ **much tall* is ruled out because *tall* already spells out the Q-feature of *much*
▷ the alternative derivation in (11) is ruled out:

(11)



▷ *tall* spells out aP (this is possible in virtue of the Superset Principle)
▷ *much* spells out QP
▷ we take this derivation to be ruled out because there is a competing, simpler, derivation, represented in (8)

▷ support for the analysis comes from the phenomenon of *much*-support (Corver 1997):

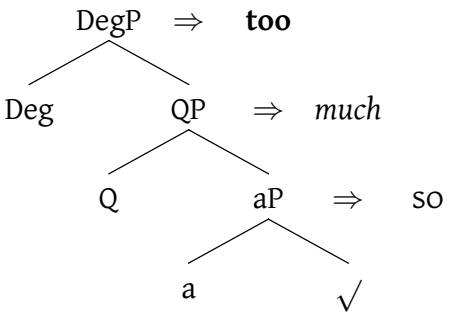
(12) a. John is fond of Mary. Maybe he is **too** *much* SO.
b. John is fond of Mary. Maybe he is **as** *much* SO as Bill.
c. The weather was hot in Cairo—**so** *much* SO that we stayed indoors all day.

▷ *much*-support occurs when the adjective is replaced by pro-form SO, and is preceded by a degree-modifier like *too/as/that/so*
▷ schematically: **Deg** + *much* + SO
▷ *much* is obligatory:

(13) John is very fond of Mary. *Maybe he is **too** SO.

▷ pro-form SO spells out aP
▷ *much* is needed to spell out QP since SO cannot spell out Q

(14)



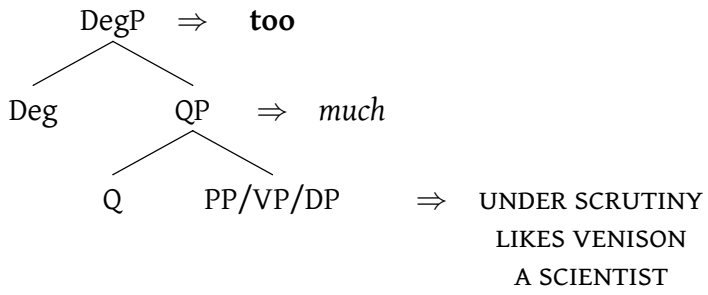
▷ *much* is also visible as a spellout of a Q-feature with nonadjectival predicates (i.e. PP, VP, DP) that semantically may function like gradable predicates

(Neeleman et al. 2006):

(15) a. He is **too** *much* [$_{PP}$ under scrutiny] to be elected at this time.
b. He [$_{VP}$ likes venison] **too** *much* for his own good.
c. He is **too** *much* [$_{DP}$ a scientist] to care about such problems.

▷ schematically: **Deg** + *much* + PP/VP/DP

(16)



▷ Q occurs with whatever can be interpreted as gradable
▷ PP/VP/DP cannot spell out QP because no lexical item exists that spells out this structure
▷ as a result, *much* is needed to spell out the Q-feature
▷ the restriction against **much tall* discussed above does not hold in these cases:

(17) a. He is [$_{QP}$ *much* [$_{PP}$ under scrutiny]]
b. He doesn't [$_{QP}$ [$_{VP}$ like venison] *much*]
c. He is [$_{QP}$ *much* of [$_{DP}$ a scientist]]

▷ the reason is that no lexical items exist that spells out the entire QP
▷ this is confirmed semantically by the fact that, when *much* is absent, the 'high degree' interpretation also must disappear:

(18) a. He's under scrutiny
b. He likes venison
c. He's a scientist

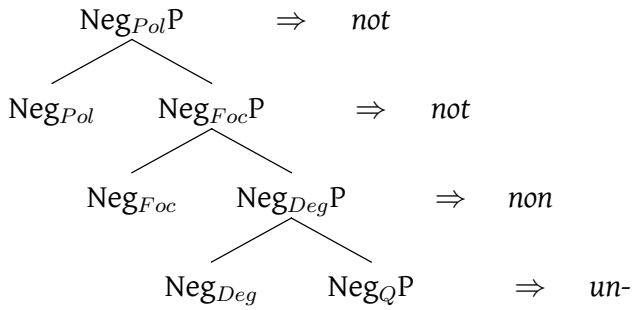
Summary

▷ The feature Q is present
  ○ semantically: in the high degree reading of gradable adjectives
  ○ visibly: in the phenomenon of *much*-support

4.2 Support for NegP

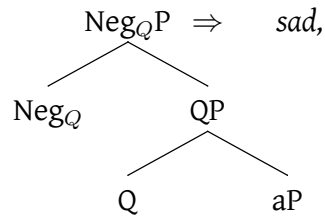
▷ recall the contrast in (2) above: **unsad* vs *not sad*
▷ De Clercq (2013): negation is internally complex
▷ different negative markers spell out different Neg-features:

(19)



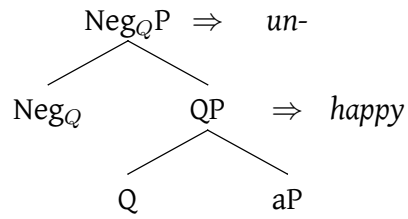
▷ negative gradable adjectives are like positive ones, but add a Neg$_Q$-feature:

(20)



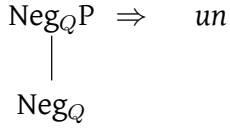
▷ adjectives with the negative prefix *un-* have the same structure, but spell it out differently:

(21)



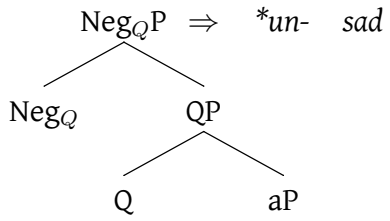
▷ QP spells out as *happy*: the lexical features of *happy* (Q, a, $\sqrt{}$) are identical to those dominated by QP
▷ the lexical entry for *un-* is given in (22):

(22)



▷ *un-* spells out the Neg_Q-feature in (21)
▷ *un-* cannot occur with negative adjectives, because they already spells out the entire Neg_QP:

(23)



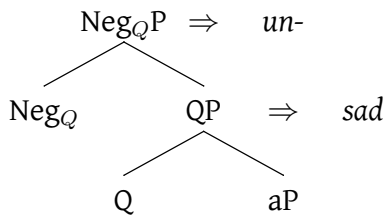
▷ for this reason, *un-* cannot also spell out the Neg_Q feature

(24)

Neg_Q	Q	a
sad		
un	happy	

▷ **unsad* would not fit into the space provided in (24)
▷ a negative adjective could in principle spell out QP because of the Superset Principle:

(25)



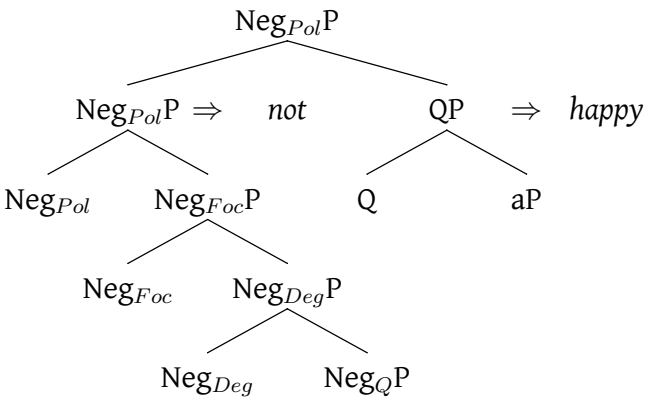
▷ however, the Elsewhere Principle will ensure that positive gradable adjectives always win the competition from their negative counterparts for spelling out QP.

▷ why is (26) good?

(26) not sad

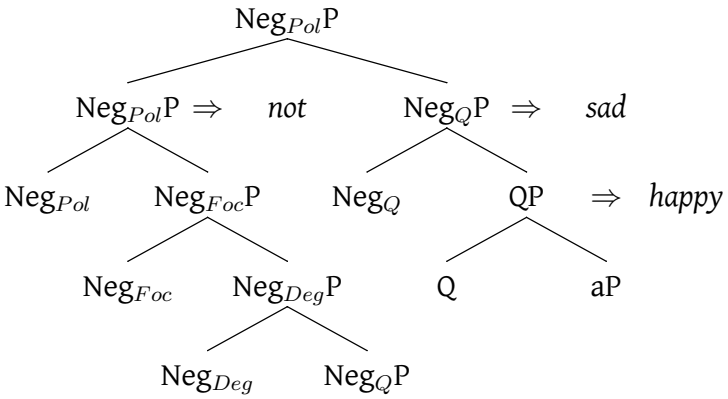
▷ *not* is internally complex (see (19) above)
▷ this complex negative marker may be merged on top of a positive gradable adjective:

(27)



▷ *not* may also be merged on top of a negative gradable adjective:

(28)



▷ in general, negation markers can be stacked, provided they spell out a different set of Neg features:

(29)
a. He is**n't sad**
b. He's **not sad**
c. He is**n't not sad**
d. He is**n't un**happy
e. He's **not un**happy

▷ however, negative markers spelling out the same features in the same position cannot be stacked:

(30)
a. ***unsad**
b. ***ununhappy**
c. *He is**n'tn't** happy

Summary

- ▷ negative gradable adjectives spell out an additional Neg_Q-feature, as compared with positive ones
- ▷ since negative gradable adjectives spell out Neg_QP, prefixal *un-* cannot also spell out this feature (whence **unsad*)
- ▷ *not* is internally complex and combines with negative adjectives

5 Further support

5.1 Dutch

- ▷ the restriction observed in (2) above holds identically in Dutch
- ▷ the prefixal negative marker *on-* 'un' combines only with positive adjectives:

(31)

ongelukkig/*ondroef, *ontriest	'unhappy/unsad'
onverstandig, onwijs/*ondom	'unwise/unfoolish'
onvriendelijk, onaardig/*onvijandig	'unfriendly/unhostile'
ongezond, onwel/*onziek	'unhealthy, unwell/unsick'
oninteressant/*onvervelend, *onsaai	'uninteresting/unboring'
onfraai/*onlelijk	'unnice/unugly'
onaantrekkelijk/*onafstotelijk	'unattractive/unrepulsive'
ongemakkelijk/*onmoeilijk	'uneasy/undifficult'
onprettig/*onvervelend	'unpleasant/unannoying'

- ▷ the account is identical: negative adjectives already spell out Neg_QP, so that *on-* cannot spell out the Neg_Q feature
- ▷ additional data supporting this analysis comes from the polar antonyms *veel/weinig* 'much/little'

(32)

a.	*veel*	*meer*	*meest*
	'much'	'more'	'most'
b.	*weinig*	*minder*	*minst*
	'little'	'less'	'least'

- ▷ the presence of the degrees of comparison indicates that *veel* and *weinig* are adjectives (Jespersen 1913, Bowers 1975, Kayne 2007)
- ▷ *veel* 'much' cannot modify adjectives, suggesting that *veel* is the equivalent of

much (recall **much tall*)
▷ however, *weinig* can modify adjectives

(33)

weinig/*veel actief	'little/much active'
weinig/*veel waarschijnlijk	'little/much likely'
weinig/*veel geloofwaardig	'little/much credible'
weinig/*veel verstandig	'little/much intelligent'
weinig/*veel duidelijk	'little/much clear'

▷ *weinig* 'little' shows the same restriction as the negative prefixes *on-/un-* in not combining with negative adjectives:

(34)

weinig actief/*passief	'little active/passive'
weinig aangenaam/*vervelend	'little pleasant/annoying'
weinig vriendelijk/*vijandig	'little friendly/hostile'
weinig duidelijk/*verward	'little clear/confused'
weinig interessant/*vervelend	'little interesting/boring'

▷ *weinig* does not modify adjectives with the negative prefix *on-*:

(35)

weinig geloofwaardig/*ongeloofwaardig	'little credible/incredible'
weinig verstandig/*onverstandig	'little intelligent/unintelligent'
weinig aantrekkelijk/*onaantrekkelijk	'little attractive/unattractive'
weinig duidelijk/*onduidelijk	'little clear/unclear'
weinig geduldig/*ongeduldig	'little patient/impatient'
weinig zichtbaar/*onzichtbaar	'little visible/invisible'

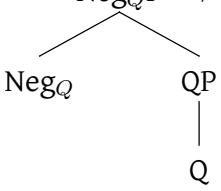
▷ this looks like a classical case of complementary distribution:
*weinig aangenaam/*weinig vervelend/*weinig onaangenaam*
▷ the distributional evidence suggests that negative adjectives with and without *on-* share an essential property

▷ we propose that *on-* spells out the Neg_Q-feature, and that *weinig* spells out the features Neg_Q and Q:

(36)

a. $\text{Neg}_Q\text{P} \Rightarrow$ *on-*

b. $\text{Neg}_Q\text{P} \Rightarrow$ *weinig*



▷ the difference is motivated by the fact that *weinig* is itself a gradable adjective:

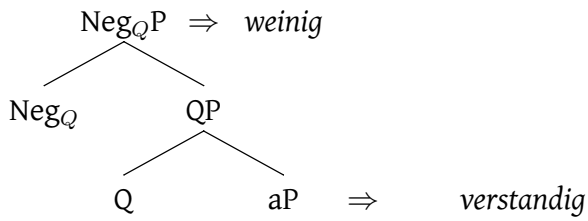
(37) Hij kocht weinig potgrond
he bought little potting-compost

▷ the absence of aP is motivated by the fact that *weinig* is defective as an adjective:

(38) *Zijn verdiensten zijn weinig
his merits are little
'His merits are few.'

▷ *weinig* is a functional, rather than a lexical, adjective
▷ *weinig* may modify positive adjectives:

(39)



▷ *verstandig* spells uit aP (Superset Principle)
▷ *weinig* spells out the Neg$_Q$ and Q features
▷ as we saw, *weinig* does not combine with
  ○ negative adjectives
  ○ *on*-prefixed adjectives
▷ it does so for the same reason that *un-* does not combine with negative adjectives: negative adjectives already spell out the entire Neg$_Q$P, so that *weinig* or *un-* cannot also spell out the same Neg$_Q$-feature

(40)

Neg$_Q$	Q	a
vervelend		
weinig		aangenaam
on-		aangenaam

5.2 French

▷ the French data show exactly the same patterns as the Dutch data

▷ negative adjectives cannot be prefixed with the negative prefixes *iN-*, *dé(s)*, or *mal-*:

(41)

injuste	*infaux	'unjust/unfalse'
ingénéreux	*inavare	'ungenerous/unstingy'
incroyant	*imméfiant	'unbelieving/undistrusting'
incomplet	*infragmentaire	'incomplete/unfragmented'
immmodeste	*inorgeuilleux	'immodest/unproud'
inactif	*impassif	'inactive/unpassive'
désagréable	*désennuyeux	'unpleasant/unannoying'
désordonné	*dénonchalant, *dénégligent	'sloppy/unsloppy'
malheureux	*maltriste	'unhappy/unsad'
malhonnête	*malméchant	'dishonest/unbad'

▷ *beacoup/peu* 'much/little' show the degrees of comparison:

(42)

a.	*beaucoup*	*plus*	*le plus*
	'much'	'more'	'most'
b.	*peu*	*moins*	*le moins*
	'little'	'less'	'least'

▷ *peu* 'little', but not *beaucoup* 'much', may modify adjectives:

(43)

peu/*beaucoup actif	'little/much active'
peu/*beaucoup probable	'little/much likely'
peu/*beaucoup crédible	'little/much credible'
peu/*beaucoup frais	'little/much fresh'
peu/*beaucoup clair	'little/much clear

▷ *peu* only modifies positive adjectives:

(44)

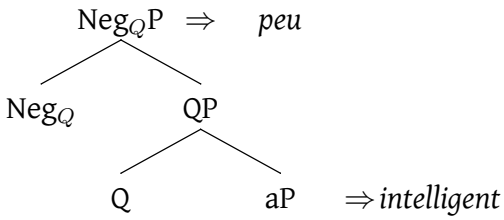
peu actif/*passif	'little active/passive'
peu agréable/*embêtant	'little pleasant/annoying'
peu aimable/*hostile	'little friendly/hostile'
peu clair/*embrouillé	'little clear/confused'
peu intéressant/*ennuyeux	'little interesting/boring'

▷ *peu* does not modify *iN*-prefixed adjectives:

(45)

peu actif/*inactif	'little active/inactive'
peu probable/*improbable	'little likely/unlikely'
peu crédible/*incrédible	'little credible/incredible'
peu conscient/*inconscient	'little conscious/inconscious'
peu visible/*invisible	'little visible/invisible'
peu tolérant/*intolérant	'little tolerant/intolerant'
peu patient/*impatient	'little patient/impatient'

(46)



(47)

Neg$_Q$	Q	a
ennuyeux		
peu		agréable
iN-/dé(s)-/mal-	probable	

5.3 English

▷ English has a slightly different system of functional adjectives:

(48)

a.	much	more	most
b.	many	more	most
c.	little	less	least
d.	few	fewer	fewest

▷ *many* and *few* add a feature [+count], and are only used adnominally (ignored in this context)

▷ different from Dutch and French, neither *much* nor *little* may modify adjectives:

(49)
a. *much/*little intelligent/foolish
b. *much/*little likely/unlikely
c. *much/*little happy/sad

▷ but with the indefinite article, we do get a contrast:

(50)

*a much happy/sad	a little ??happy/sad
*a much early/late	a little early/late
*a much clean/dirty	a little ?clean/dirty
*a much pleasant/annoying	a little ??pleasant/annoying

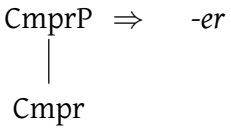
- ▷ *a much* cannot modify adjectives, but *a little* can (with a preference for negative ones)
- ▷ *a little* is internally complex, just like *not*
- ▷ like *not*, it may be merged on top of both positive and negative gradable adjectives
- ▷ possibly, **a much* is ruled out for semantic reasons (Q is already spelled out by the adjective, and *a much* would double this)
- ▷ the preference of *a little* for negative adjectives is a topic for future research

6 Comparatives

6.1 Synthetic comparatives

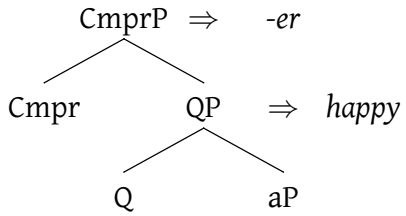
- ▷ the synthetic comparative morpheme *-er* spells out a feature Cmpr (Bobaljik 2012)

(51)

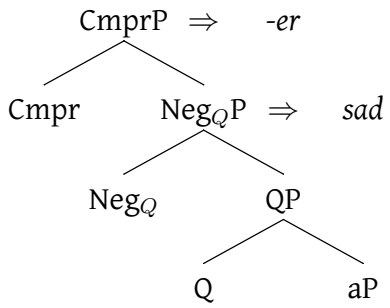


- ▷ CmprP dominates QP (in the case of positive adjectives) or NegP (in the case of negative adjectives):

(52)



(53)



▷ *happy/sad* move into the Spec of CmprP, yielding *happi-er* and *sad-der*

6.2 Analytic comparatives

▷ both *more* and *less* can modify adjectives (unlike the positive degree items *much/little*):

(54) a. more/less intelligent
b. more/less likely
c. more/less interesting

▷ both *more* and *less* can modify negative adjectives:

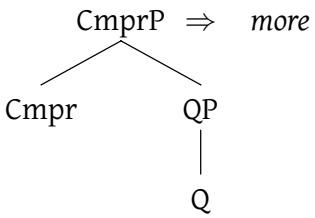
(55) a. more/less foolish
b. more/less annoying
c. more/less dangerous

▷ both *more* and *less* can modify *un*-prefixed adjectives:

(56) a. more/less unfriendly
b. more/less unhealthy
c. more/less unkind

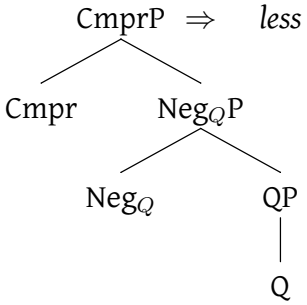
▷ in sum, none of the restrictions that we observed for *much* and *little* in the previous sections is found in the analytic comparative
▷ we showed this only for English, but the same is true for Dutch (*meer/minder*) and French (*plus/moins*)
▷ this suggests an analysis which allows for more than one Neg$_Q$-feature (e.g. *less foolish/unfriendly*)
▷ we propose an analysis like the one for *not sad* above
▷ the lexical items for *more* and *less* are internally complex
▷ *more* is the suppletive comparative of *much*:

(57)



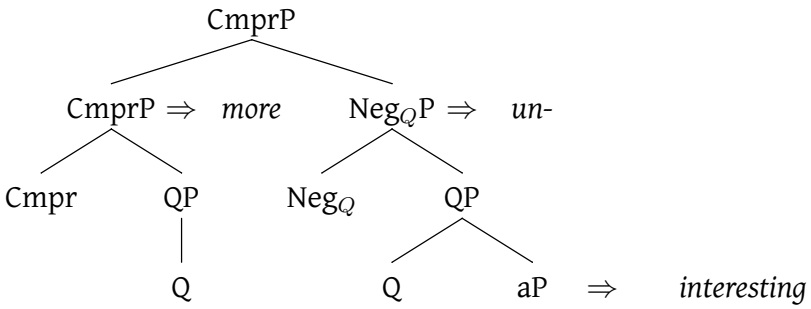
▷ *less* is the suppletive comparative of *little*:

(58)

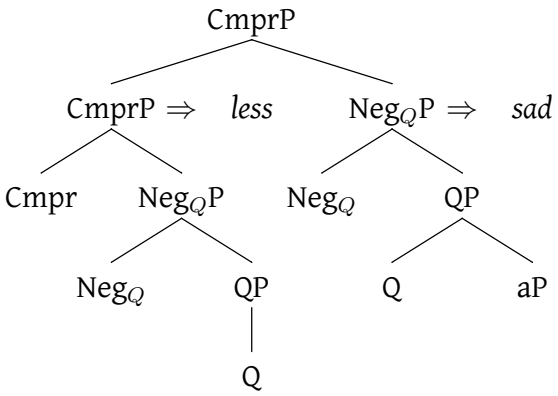


▷ *more* and *less* are merged on top of the adjective:

(59)



(60)



7 Conclusion

Summary:

- ▷ the difference between positive and negative gradable adjectives is a difference in size, which is a difference in the number of features that they spell out.
- ▷ this proposal allowed us to account for a number of curious restrictions, hitherto unexplained and/or unobserved:
  - *un-* does not combine with negative adjectives
  - Dutch *weinig* and French *peu* do not combine with negative adjectives
- ▷ *not* is internally complex and can be combined with positive and negative adjectives alike
- ▷ the markers of the analytic comparative (*more/less, meer/minder, plus/moins*) are internally complex like *not*, and can be combined with positive and negative adjectives alike

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